

19. Describe the role played by any three metal ions in biological systems.
20. Illustrate regarding effect of pH and temperature on enzyme reactions.
- 

NOVEMBER/DECEMBER 2024

**23PECH24A — BIO INORGANIC  
CHEMISTRY**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. Give two examples for essential and trace elements.
2. Write the applications of  $\text{Ca}^{+2}$  ion in biological system.
3. Define Bohr Effect in electron transfer process.
4. What is the structure of ferredoxin? Mention any two important functions.
5. Write the equation for nitrogen fixation.
6. State the difference between Photosystem-I and II.
7. What is the metal complex used in cancer treatment?
8. Write short notes on Technetium Imaging Agents.



9. Define enzymes.
10. Sketch the Michalis - Menton equation.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the role of carboxy peptidase in biological system.

Or

- (b) Explain the structural features and biological roles of superoxide dismutase.

12. (a) Write a short note on cytochromes.

Or

- (b) Explain the oxygenation mechanism in haemoglobin.

13. (a) Discuss about the types of nitrogen fixing microorganisms.

Or

- (b) Discuss the structure and function of photo systems.

14. (a) Describe the principles involved in using metal complexes as contrast enhancing agents in MRI.

Or

- (b) Write notes on anticancer agents.

15. (a) Classify enzymes and discuss their properties.

Or

- (b) Discuss factors contributing to the efficiency of enzyme.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. (a) Explain the function of  $\text{Na}^+ - \text{K}^+$  pump with a schematic diagram.

- (b) Briefly discuss the biological activity of catalase.

17. Write short note on: Hemerythrin and Hemocyanin.

18. How are dinitrogen complexes produced? Explain the in vitro reduction of dinitrogen complexes.